

THE MAYFLIES (EPHEMEROPTERA)  
OF THE NAVAJO RESERVOIR BASIN,  
NEW MEXICO AND COLORADO

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## INTRODUCTION

In June and July, 1960, an expedition conducted by the University of Utah for the U. S. Bureau of Reclamation sampled and surveyed the plant and animal life of the Navajo Reservoir Basin in New Mexico and Colorado. Study of the material reported herein was supported by a grant from the National Science Foundation (NSF-G 13329). During the course of this trip, a large collection of Ephemeroptera was obtained by William L. Peters and Loren D. Jensen from the San Juan River and its tributaries, Piedra and Los Pinos rivers.

Previously, little has been known about the mayfly fauna of the San Juan River and its tributaries. The only published record is that of Ametropus albrighti taken near Framington, New Mexico, an area not covered in this report.

The San Juan, Piedra and Los Pinos rivers in the Navajo Reservoir Basin are swift flowing streams with sand to boulder bottoms. When the rivers are low in middle and late summer, many still, well silted side pools are formed.

In the following species accounts, all records were collected by the senior author and Loren Jensen in 1960. The river mile (abbreviated RM), given for many localities, indicates the distance in miles above the mouth of the river, as given on USGS Plan and Profile Maps of the San Juan River, sheets 9, 10 and 11. All specimens included in this report are deposited in the collections of the University of Utah. The three new species recorded herein will be described in a forthcoming paper.

## ANNOTATIONS

### Siphonuridae (family)

#### Siphonurus occidentalis Eaton

Mature nymphs of this species were abundant in side pools along the San Juan River. All adults reported were reared in the field.

Record - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 42 nymphs, 2 ♀ subimagos.

### Heptageniidae (family)

#### Heptagenia solitaria McDunnough

Many adults were taken from vegetation along the San Juan River, while nymphs were collected from large, smooth rocks in the current.

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 30 ♂ imagoes, 18 ♀ imagoes, 27 nymphs. Colorado: La Plata County, Los Pinos River, La Boca, July 15, 4 ♂ imagoes.

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Heptageniidae (family) continued

Heptagenia simplicoides McDunnough

A few adults were taken from vegetation along the San Juan River.

Record - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 10 ♂ imagoes, 12 ♀ imagoes.

Heptagenia elegantula Eaton

Adults of H. elegantula were collected at lights and on vegetation along the San Juan River.

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 19 ♂ imagoes, 31 ♀ imagoes. Colorado: Archuleta County, San Juan River, RM 180, July 5, 2 ♀ imagoes.

Heptagenia species novum

A large number of adult Heptagenia are herein assigned to a new species. This species is closely related to H. elegantula; however, the new species is much paler than H. elegantula and genitalia differences are present between the two species. Adults were collected at lights and on vegetation along the San Juan River.

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, many ♂ and ♀ imagoes. Colorado: Archuleta County, San Juan River, RM 180, July 5, 3 ♂ imagoes.

Heptagenia sp.

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, many nymphs. Colorado: Archuleta County, San Juan River, RM 176, July 4-12, 10 nymphs; RM 180, July 5, 14 nymphs. Piedra River, 5 mi. north Arboles, July 14, 5 nymphs. La Plata County, Los Pinos River, July 8, 10 nymphs; Ignacio, July 6-8, many nymphs.

Rhithrogena undulata Banks

Adults were collected from vegetation along the river banks.

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 5 ♂ imagoes, 13 ♀ imagoes. Colorado: Archuleta County, San Juan River, RM 180, July 5, 1 ♂ imago.

Rhithrogena sp.

Several nymphs probably representing R. undulata were taken from large rocks in rapids.

Records - Colorado: Archuleta County, San Juan River, RM 180, July 5, 2 nymphs. La Plata County, Los Pinos River, July 8, 2 nymphs.

Epeorus sp.

Record - Colorado: La Plata County, Los Pinos River, July 8, 1 nymph.

Baetidae (family)

Callibaetis nigrinus Banks

Two females of this species were found floating on the water. These specimens probably emerged from a pond in the basin.

Record - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 2 ♀ imagoes.

## MAYFLIES

### Baetidae (family) continued

#### Baetis intermedius Dodds

This species was taken on vegetation along the river banks.

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 4 ♂ imagoes. Colorado: Archuleta County, San Juan River, RM 180, July 5, 1 ♂ imago; La Plata County, Los Pinos River, La Boca, July 15, 1 ♂ imago.

#### Baetis propinquus Walsh

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 4 ♂ imagoes, 35 ♀ imagoes.

#### Baetis species novum

Adults of this new species were collected at lights on the San Juan River. The species is much paler than other species of Baetis within the area.

Record - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 11 ♂ imagoes, 2 ♀ imagoes.

#### Baetis sp.

Numerous Baetis nymphs were collected in moderately flowing parts of all three rivers. The bottom type was predominately small rocks.

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, many nymphs. Colorado: Archuleta County, San Juan River, RM 180, July 5, 9 nymphs; Piedra River, 5 mi. north Arboles, July 14, 2 nymphs; at Arboles, July 3, 2 nymphs; La Plata County, Los Pinos River, July 8, 7 nymphs; Ignacio, July 6-8, 8 nymphs.

#### Centroptilum species novum

Two males collected from the San Juan River are tentatively placed in a new species. The males do not resemble any known Western North American Centroptilum. This species was collected from vegetation along the river bank.

Record - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 2 ♂ imagoes.

### Tricorythidae (family)

#### Tricorythodes sp.

Two females and several nymphs of Tricorythodes can not successfully be placed as to species. The females were found floating on the water.

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 2 ♀ imagoes, 27 nymphs. Colorado: Archuleta County, San Juan River, RM 176, July 4-12, 8 nymphs; Piedra River, 5 mi. north Arboles, July 14, 5 nymphs; La Plata County: Los Pinos River, July 8, 8 nymphs, Ignacio, July 6-8, 15 nymphs.

### Ephemerellidae (family)

#### Ephemerella inermis Eaton

Numerous nymphs and adults are herein assigned to this species. Nymphs were collected in swift flowing water with a gravel to rock bottom, while the adults were abundant at lights and on vegetation. During the period of collection, this species was the most abundant in the Navajo Reservoir Basin.

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### Ephemerella inermis (continued)

Records - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, many ♂ and ♀ imagoes, many nymphs. Colorado: Archuleta County, San Juan River, RM 176, July 4-12, 7 nymphs, RM 180, July 5, 1 ♂ imago, 3 nymphs; Piedra River, Arboles, July 3, 10 nymphs; 2 mi. north Arboles, July 8, 1 nymph; 5 mi. north Arboles, July 14, 1 nymph.

### Ephemerella micheneri Traver

This species was abundant in the upper regions of the Navajo Reservoir Basin. Attempts to collect the species in the San Juan River were to no avail. Nymphs were collected in swift flowing water with a gravel to rock bottom. This species has previously been reported from California.

Records - Colorado: La Plata County, Los Pinos River, July 6-8, many nymphs; Los Pinos River, La Boca, July 15, 4 nymphs; Archuleta County, Piedra River, 5 mi. north Arboles, July 14, 2 nymphs.

### Leptophlebiidae (family)

#### Paraleptophlebia pallipes (Hagen)

Specimens of this species were collected on vegetation along the San Juan River.

Record - New Mexico: San Juan County, San Juan River, RM 165, June 29-July 16, 4 ♂ imagoes, 2 ♀ imagoes.

#### Paraleptophlebia sp.

Record - Colorado: Archuleta County, Piedra River, 5 mi. north Arboles, July 14, 1 nymph.

#### Choroaterpes sp.

All nymphs collected were young.

Records - Colorado: La Plata County, Los Pinos River, July 8, 5 nymphs; Los Pinos River, Ignacio, July 6-8, 5 nymphs.

## SUMMARY

A collection of Ephemeroptera from the Navajo Reservoir Basin reveals 18 species, representing 11 genera. Localities are given for new species of Heptagenia, Baetis and Centroptilum. Ephemerella micheneri is recorded from the basin, a range extension of 500 miles. The other species in the Navajo Reservoir Basin are generally widespread.

## REFERENCES

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